

REMARKS

Upon entry of this paper, claim 1 has been amended, claim 3 has been cancelled, and no claims have been added as new claims. Thus, claims 1 and 2 are presently pending in this application. No new matter has been added. The cancellation of claim 3 should in no way be construed to be an acquiescence to any of the rejections stated. Claim 3 is being canceled solely to expedite the prosecution of the present application. Applicant reserves the option to further prosecute the same or similar claims in the instant or a subsequent patent application.

Drawings

Applicant provides, herewith, a formal set of drawings. The drawings contain the same content as those filed with the original PCT application published as WO 02/04147, thus no new matter has been added to the application. Applicant considers the inclusion of the formal drawings with this Response to be fully responsive to the Examiner's requirement for drawings as expressed in Paragraph 1 of the Office Action mailed March 21, 2003 (Paper No. 9). Should there be any remaining issues with the drawings, Applicant respectfully requests that the Examiner telephone the below signed Representative for the Application to resolve such issues.

Summary of Invention in Pending Application

Prior to discussing the substantive rejections below, applicant wishes to provide a brief summary of some of the features relating to what he regards as his invention as claimed in the pending application. This Summary is not intended to convey all of the inventive aspects of the present invention. Instead, this Summary is intended to merely point out some of the features that have been identified as relevant to the rejections stated in the Office Action.

The present invention relates to an approach in which the movable chamber walls of a die cast mold are located not exclusively outside the mold but are disposed to allow displacement of the chamber contents into the mold. This approach results in a savings in material since the sprue can be avoided or considerably reduced. Since the material enters the mold directly from the chamber without any intermediate injection channel, larger flow cross-sections can be used and, as a result, possible deviations in material flow can be avoided. The material therefore does not need to be heated to as high a temperature as it otherwise would to permit the optimal flow-through capability into the mold for comparatively smaller inlet ports or to permit the proper flow over long distances. The result is that a lower temperature level can be set for the molten metal – with the result that this measure allows the heat load on the device to be reduced, as already mentioned, shortens cool-down times, and enhances the efficiency of the device.

One of the two movable walls of the injection unit chamber may be advantageously designed as the section of the wall of the mold cavity which is designed to be movable for the purpose of opening the mold. This approach avoids complex multi-axial movements and ensures that, when the mold is opened, this injection unit wall, which is movable into the casting mold, is moved together with the section of the mold to be opened.

Claim Rejections under 35 U.S.C. §102

Claims 1-3 were rejected under 35 U.S.C. §102 as being anticipated by US Patent No. 5,515,905 to Lester (Lester '905) or US Patent No. 3,038,220 to Saives (Saives '220). Claim 3 has been cancelled, and the subject matter incorporated into claim 1, thus, no additional search is required for the amended scope of claim 1. In addition, Applicant offers the following comments to further distinguish the pending claims from the cited references.

Neither Lester '905 nor Saives '220 discloses a device for "... producing castings out of a fusible or dispersible base material, comprising an injection unit from which the at least partially liquefied material can be injected into a mold, wherein the injection unit has an inlet port for feeding the material, and wherein the injection unit has a chamber with two movable walls which are adapted to move either together in the same direction or in opposite directions so to vary a volume of the chamber, and wherein the two walls forms the cavity, wherein one of the two walls is movable into the mold; and *wherein the one of the two walls that is movable into the mold is configured to partially determine the surface shape of the casting* (emphasis added)."

Anticipation can only be established by a single prior art reference teaching each and every element of the claimed invention performing the identical function in the same way. Applicant respectfully submits that claimed aspects of the present invention are conspicuously absent from both Lester '905 and Saives '220 and thus, there can be no anticipation.

In light of the above comments, applicant respectfully submits that the claims of the present invention are not anticipated by, and are therefore in condition for allowance over, the cited documents.

Claim Rejections under 35 U.S.C. §103

Claim 3 was rejected under 35 U.S.C. §103 as allegedly being unpatentable over either Lester '905 or Saives '220 and in further view of CH 661,883 ('CH '883'). Claim 3 has been cancelled. Applicant offers the following comments to further distinguish the pending application from the cited documents.

There is no suggestion for the combination of the cited references, and the device resulting from such combination would not operate. In contrast to amended claim 1, CH '883 does not show two moveable walls of the injection chamber 3. Rather there is a piston 4 and a lock 8. The lock 8 may open or close the injection chamber 3, but can not be moved in the same or opposite direction as the piston 4 to vary or displace the volume of the injection chamber 3. When the lock 8 is moved from a position where the lock 8 forms part of the injection chamber wall (i.e., where the lock 8 closes the left end of the injection chamber 3), the injection chamber 3 is open and its volume can not be further displaced. Thus, in contrast to Saives '220 and Lester '905, CH '883 relates to a substantially different technology, making the references uncombinable, and the resulting device inoperable.

Applicant respectfully submits that unless a *prima facie* case of unpatentability with respect to known facts is established, applicant is not obliged to proffer any evidence of nonobviousness. To establish a *prima facie* case there must be some suggestion or motivation, either in the prior art or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine multiple reference teachings. There must then be a reasonable expectation of success. Finally, the prior art reference or references (when combined) must teach or suggest all the claimed limitations.

Applicant respectfully submits that Lester '905 or Saives '220 in further view of CH '883 fail to teach or suggest every characteristic of applicant's claims. Applicant

further submits that the claims of the present invention are not obvious with respect to, and are therefore allowable over, the cited documents.

Additional Reference

Applicant agrees with the examiner that the remaining document cited in the official action of US Patent No. 2,137,764 to Wagner is cumulative of those applied by the examiner. Applicant is therefore not providing any further comments concerning the same at this time.

CONCLUSION

In view of the foregoing, it is respectfully submitted that this application is now in condition for allowance. Applicant courteously solicits allowance of the claims in the form of a Notice of Allowance. Should there be any outstanding issues of patentability following the entry of this response, a telephone interview is respectfully requested to resolve such issues.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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